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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Dong-Ryong Kim

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EXAMINER

TRINH, TAN H

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/823,603	Applicant(s) KIM, DONG-RYONG	
	Examiner TAN TRINH	Art Unit 2618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 June 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 and 10-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) 10-13 and 25-28 is/are allowed.
- 6) ☒ Claim(s) 1-8 and 14-24 is/are rejected.
- 7) ☒ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-8 and 17-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wong (U.S. Pub. 2004/0127267) in view of Montgomery (U.S. Patent No. 6,441,753). Further in view of Arai (U.S. Pub. No. 2004/021873).

Regarding claims 1 and 17, Wong teaches in a mobile terminal provided with a rotating key having a plurality of dome switches, and Montgomery teaches multi-function key of the mobile terminal with plurality of dome switches (26) (156 and 154 etc ...) located on one side of printed circuit board (PCB) (28) for detecting a contact signal when pressed and a plurality of contact surfaces on the other side of the printed circuit board (PCB) (see rejection above). But Wong or Montgomery does not mention the newly added limitation of: the function key comprises a selected *one of* a zoom, brightness level, direction of motion picture and selecting channel. However, Such teaching is taught by Arai (see fig. 18, rotary switch with function/selection key (531), page 11, sections [0202-0211]). In this case, Arai teaches a multi-function key is a plurality of control buttons (531) (see fig. 18), and the control button (531) may have control functions for the camera module such as selected zoom, photographing definition, call function as well as control function on the selecting switch (531) when user is pressed on the dome switch (531) to place a cal, or place a Zoom function, and it is also a rotary switch.

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Therefore, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify above combination of the teaching of Wong Montgomery with Arai, in order to provide the portable terminal having camera function with the control buttons for multi-function to control the photographing and call start/end function of the mobile terminal (see suggested by Arai on page 12, sections [0223-0224]).

Regarding claims 2 and 18, Wong teaches the step of turning the rotating key to select a menu or function (see fig. 1-8, 11 and 17-19, page 3 and 5, sections [0039 and 0055]). In this case, selecting menu or the data entry mode for scrolling information on the screen comprises: Wong inherently teaches when the rotating key is turned clockwise, moving a cursor to menus or functions in a predetermined direction; and when the rotating key is turned counterclockwise, moving the cursor to menus or functions in the opposite direction (see fig.1-8, page 3-5, sections [0038-0039, 0046-48 and 0055]). In this case, the when the rotating interface (key) 210 is rotating 360 degree in a predetermined direction and the teeth 1102 are selecting and couple position the switch lever and affect is that the information on the display 204 like menu or game in one coinciding direction and also data entry mode for scrolling information on the screen.

Regarding claims 3 and 19, Wong teaches inherently teaches in an up/down scroll display mode, the cursor moves to upper menus or functions when the rotating key is turned clockwise and to lower menus or functions when the rotating key is turned counterclockwise (see fig.1-8, page 3-5, sections [0038-0039, 0046-48 and 0055]). In this case, the when the rotating interface (key) 210 is rotating 360 degree in a predetermined direction and the teeth 1102 are selecting and

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couple position the switch lever and affect is that the information on the display 204 like menu or game in one coinciding direction and also data entry mode for scrolling information on the screen.

Regarding claims 4 and 20, Wong teaches inherently teaches the cursor moves to lower menus or functions when the rotating key is turned clockwise and to upper menus or functions when the rotating key is turned counterclockwise (see fig.1-8, page 3-5, sections [0038-0039, 0046-48 and 0055]). In this case, the when the rotating interface (key) 210 is rotating 360 degree in a predetermined direction and the teeth 1102 are selecting and couple position the switch lever and affect is that the information on the display 204 like menu or game in one coinciding direction and also data entry mode for scrolling information on the screen.

Regarding claims 5 and 21, Wong inherently teaches in a left/right scroll display mode, the cursor moves to left menus or functions when the rotating key is turned clockwise and to right menus or functions when the rotating key is turned counterclockwise (see fig.1-8, page 3-5, sections [0038-0039, 0046-48 and 0055]). In this case, the when the rotating interface (key) 210 is rotating 360 degree in a predetermined direction and the teeth 1102 are selecting and couple position the switch lever and affect is that the information on the display 204 like menu or game in one coinciding direction and also data entry mode for scrolling information on the screen.

Regarding claims 6 and 22, Wong inherently teaches the cursor moves to right menus or functions when the rotating key is turned clockwise and to left menus or functions when the

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rotating key is turned counterclockwise (see fig.1-8, page 3-5, sections [0038-0039, 0046-48 and 0055]). In this case, the when the rotating interface (key) 210 is rotating 360 degree in a predetermined direction and the teeth 1102 are selecting and couple position the switch lever and affect is that the information on the display 204 like menu or game in one coinciding direction and also data entry mode for scrolling information on the screen.

Regarding claims 7 and 23, Wong teaches the step of pressing a dome switch to select a menu or function comprises: when a left or right dome switch is pressed, moving a cursor to left or right menus or functions; and when an upper or lower dome switch is pressed, moving the cursor to upper or lower menus or functions (see fig.1-8, page 3-5, sections [0038-0039, 0046-48 and 0055]). In this case, the when the rotating interface (key) 210 is rotating 360 degree in a predetermined direction and the teeth 1102 are selecting and couple position the switch lever and affect is that the information on the display 204 like menu or game in one coinciding direction and also data entry mode for scrolling information on the screen and when selected that is inherently pressed the switch when the switch is coupling.

Regarding claims 8 and 24, Wong inherently teaches the dome switches are used as short-cut keys (see fig.1-8, page 3-5, sections [0038-0039, 0046-48 and 0055]). In this case, the multi-function key is pressed and selected using the dome switch to contact with other function that is a used as short-cut keys or the re-dialing switch is also the short-cut keys for re-dialing.

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3. Claims 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wong (U.S. Pub. 2004/0127267) in view of Montgomery (U.S. Patent No. 6,441,753). Further in view of Tada (U.S. Pub. No. 2005/0168566).

Regarding claim 14, Wong teaches in a mobile terminal (100) provided with a rotating key having a plurality of dome switches (see fig.1-8 and 17-19, page 2-3 sections [0033-0039] and page 4, section [0046]), on one side which can detect a contact signal when pressed and a plurality of contact surfaces on the other side which can detect the position of the rotating key in each direction of rotation (see fig.1-8 and 17-19, page 3-5, sections [0038-0039, 0046-48 and 0055]); and Arai teaches in a mobile terminal (300) provided with a camera (303) and a rotating key (531) (see fig. 2 and 18) when a zoom function is selected in a camera mode (see fig. 18, camera mode with zoom function on the rotation switch 531, page 11, sections [0198-0211]), when the rotating key is turned clockwise, reproducing the moving picture according to the turning speed in a predetermined direction corresponding to the clockwise turning; and when the rotating key is turned counterclockwise, reproducing the moving picture according to the turning speed in a predetermined direction corresponding to the counterclockwise turning (see fig. 18, the rotation multi-function switch 531, page 11, sections [0198-0211], and page 9-10, sections [000170-0173] and see rejection above). But Wong or Montgomery does not mention the limitation of a rotating key for use with mobile terminal which has plurality of dome switches located on one side of printed circuit board (PCB) for detecting a contact signal when pressed and a plurality of contact surfaces on the other side of the printed circuit board (PCB) for detecting. However, Such teaching is taught by Tada teaches (see fig. 2-5 and page 10, section [0175-0177]). In this case, Tada teaches the rotating key (14 or 1709) of section (14) is pressed

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the function of the key is acting a dome switch and control the various function of the camera mode and phone mode contact surfaces on the other side of the printed circuit board (PCB) for detecting.

Tada teaches a mobile terminal (1 or 1703) provided with a camera (1714) and a rotating key (14 or 1709) (see fig. 1 and 17, page 1, sections [0006 and 0009]), and rotating the switch 14 on the counter clockwise or clockwise to control the function of the Zoom or the menu mode for the camera and phone function as direction for produce a moving picture (fig. 10-16, and page 8, sections [0145-0159, page 10, section [0175-0177], and page 14, section [0250]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify above teaching of Wong and Montgomery with Tada, in order to provide control section determines the direction is detected with the calculated rotate amount with current position related to the direction of the rotating of the switch (see suggested by Tada on page 8, section [0149]).

4. Claims 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wong (U.S. Pub. 2004/0127267) in view of Tada (U.S. Pub. No. 2005/0168566).

Regarding claim 15, Wong teaches in a mobile terminal (100) provided with a rotating key having a plurality of dome switches on one side which can detect a contact signal when pressed and a plurality of contact surfaces on the other side which can detect the position of the rotating key in each direction of (see fig.1-8 and 17-19, page 3-5, sections [0033-0039, 0046-48 and 0055]). In this case, the when the rotating interface (key) 210 is rotating 360 degree in a predetermined direction and the teeth 1102 are selecting and couple position the switch lever and

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affect is that the information on the display 204 like menu or game in one coinciding direction and also data entry mode for scrolling information on the screen and when selected that is inherently pressed the switch when the switch is coupling. But Wong does not mention in a mobile terminal provided with a TV receiver detecting the direction of rotation of the rotating key to select a channel in a television mode; and displaying video signals broadcast on a channel selected according to the direction of rotation of the rotating key.

However, Tada teaches direction of rotation function (14) in a mobile terminal provided with a TV receiver detecting key (14) to select a channel in a television mode (page 9, section [0162]); and displaying video signals broadcast on a channel selected (fig. 1 and 17, page 9, section [0162]). In this case, Tada teaches the rotating key (14) for select the menu items on various types of remote controllers for use in TV receiver, and the like. Tada also teaches a mobile terminal (1 or 1703) provided with a camera (1714) and a rotating key (14 or 1709) (see fig. 1 and 17, page 1, sections [0006 and 0009]), which has a plurality of switches located on one side of a printed circuit board (PCB) for detecting a contact signal when pressed and a plurality of contact surfaces on the other side of the PCB for detecting the position of the rotating key in each direction of rotation (see fig. 2-5), and the rotating key (14 or 1709) of section (14) is pressed the function of the key is acting a dome switch and control the various function of the camera mode and phone mode (see page 10, section [0175-0177]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify above teaching of Wong with Tada, in order to provide user with a mobile terminal provided with a TV receiver detecting key (14) to select a channel in a television mode (suggested by Tada on page 9, section [0162]).

Regarding claim 16, Tada teaches the switches (14) are used to select a channel (see page 9, section [0162]). In this case, the rotate switch 14 is can be use to menu function on various device, can be remote control of the TV receiver for selecting the channel.

Allowable Subject Matter

5. Claims 10-13 and 25-28 are allowed.

Reasons for allowance

6. The following is an examiner's statement of reasons for allowance:

Regarding claim 10 and 25, Tada teaches a mobile terminal (1 or 1703) provided with a camera (1714) and a rotating key (14 or 1709) (see fig. 1 and 17, page 1, sections [0006 and 0009]), which has a plurality of switches located on one side of a printed circuit board (PCB) for detecting a contact signal when pressed and a plurality of contact surfaces on the other side of the PCB for detecting the position of the rotating key in each direction of rotation (see fig. 2-5), a method for using the rotating key (14) comprising the steps of: when a zoom function (42A) is selected in a camera mode (1713) (see fig. 14, page 7, section [0131-0135] and page 9, section [0157]), zooming in or out according to the direction and speed of rotation of the rotating key (fig. 10-16, and page 8, sections [0145-0159, page 10, section [0175-0177], and page 14, section [0250]); Tada teaches rotating the switch 14 on the counter clockwise or clockwise to control the function of the Zoom or the menu mode for the camera and phone function as direction and speed (see fig. 26A-D, page 14, section [0250]). However, Tada or AraiThe or above prior art of record, however, fail to disclose or render obvious "when a brightness control function is

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selected in the camera mode, controlling the brightness of a picture according to the direction and speed of rotation of the rotating key” on it means and function as specified in the claim.

Response to Arguments

7. Applicant's arguments with respect to claims 1-9 and 14-24 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

8. **Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to:

(571) 273-8300, (for Technology Center 2600 only)

*Hand-delivered responses should be brought to the Customer Service Window (now located at the **Randolph Building, 401 Dulany Street, Alexandria, VA 22314**).*

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tan Trinh whose telephone number is (571) 272-7888. The examiner can normally be reached on Monday-Friday from 9:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiners supervisor, Anderson, Matthew D., can be reached at (571) 272-4177.

The fax phone number for the organization where this application or proceeding is assigned is **(571) 273-8300**.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the **Technology Center 2600 Customer Service Office** whose telephone number is **(703) 306-0377**.

10. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tan H. Trinh
Division 2618
August 10, 2009

/TAN TRINH/
Primary Examiner, Art Unit 2618